

female; same locality, June 21, 1948, 10 specimens from 15 bats; bat infested cabin, Flathead County, September 3, 1943, Dr. W. L. Jellison, one male. Oregon: Malheur Lake, Harney County, August 22, 1936, Mr. R. L. Post, three specimens from *Myotis yumanensis sociabilis*. Washington: Lenore Lake, Grant County, August 14, 1940, Mr. H. Broadbrooks, two males and one female, from *Myotis lucifugus carissima*; Washington, 1950, Dr. M. Johnson, one male, from *Myotis* sp.; Thurston County, June 20, 1952, Dr. M. Johnson, one female, from *Myotis californicus*. British Columbia: Okanagan, August 31, 1951, Dr. M. Johnson, one female from *Myotis yumanensis*.

Published records include localities in Arizona, California, Colorado, Louisiana, Montana, New Mexico, Oregon, Utah, Washington, British Columbia, and Mexico.

***Basilia rondanii* Guimaraes and D'Andretta**

In the United States *Basilia rondanii* has been known only from one male and one female (paratypes) from Shumla, Texas. A third specimen from the United States has now been identified. This is a female collected from a bat colony in a railroad tunnel, near Shumla, Val Verde County, Texas, on September 18, 1940, by Dr. W. L. Jellison and Mr. G. M. Kohls, and originally determined by Dr. Curran as *B. forcipata*.

Two additional collections of this species were recently received, both of which represent new Mexican state records, and new host records. The collections are as follows:— Eight males and eight females from eight miles east of San Blas, Nayarit, August 23, 1960, Dr. A. Gardner, from *Myotis fortidens*; and three males and three females from five miles southeast of Armeria, Colima, from *Sturnira lilium parvidens*.

***Basilia boardmani* Rozeboom**

This is an eastern species, and to the author's knowledge, has been reported only from Florida, Georgia and Illinois.

Literature Cited

PETERSON, B. V. (1960). New distribution and host records for bat flies, and a key to the North American species of *Basilia* Ribeiro (Diptera: Nycteribiidae). Proc. Entomol. Soc. Ont. 90 (1959): 30-37.

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Two New Species of Ontario Black Flies

(Diptera: Simuliidae)¹

D. M. WOOD

Department of Biology, McMaster University, Hamilton, Ontario

The two species described in this paper were discovered during a continuing study of the simuliid fauna of Ontario. The type locality of both species is a small roadside rivulet draining a cedar swamp and flowing through an open field at the Gryffin Sideroad and Highway No. 11, 3 miles south of Huntsville, Ontario.

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Cnephia abditoides, new species

Female. A small to medium-sized, black species with thin grayish-black pollen and sparse, dull yellowish-brown hair.

Posterior surface of head, frons and clypeus grayish-black, subshining with thin, gray pollen. Hair sparse, recumbent, yellowish-brown on frons, somewhat erect and directed medially on clypeus. Clypeus only slightly higher than broad. Frons wide, V-shaped, at its narrowest point one-fifth the width of the head. Antenna black with paler grayish pubescence. Scape and pedicel slightly paler with short, dark hair. Palpus black with dark hair. Sensory vesicle of third segment about one-quarter of the length of the segment. Mouthparts fully developed for bloodsucking.

Scutum black with thin grayish pollen and sparse, recumbent yellowish hair. Scutellum relatively bare with a few, erect hairs. Pleuron black, thinly gray pollinose. Precoxal bridge present. Mesepimeral tuft with mixed pale and dark hair. Pronotum and proepisternum with erect pale hair. Costa, stem vein, dorsal surface of radius and ventral surface of subcosta and radial sector with fine dark hair; spinules entirely absent. Radial sector unforked. Legs dark grayish-brown with dull yellow hair darkening to brown on the apices of femora and tibiae, and on the tarsi. Calcipala minute, pedisulcus nearly absent. Claw with small basal tooth (Fig. 2).

Abdomen grayish-brown; tergites slightly darker with thin grayish pollen. Hair sparse, short and recumbent, mixed pale and dark. Basal fringe short, pale and relatively sparse. Genitalia as in Fig. 1. Eggs mature in newly emerged females.

Male. Clypeus black with long, reclinate black hair. Antenna black with pale pubescence and a few dark hairs on scape and pedicel. Palpus black with dark hair.

Scutum black, thinly gray pollinose, subshining, with sparse brown hair. Scutellum with sparse, erect black hair. Pleuron black, thinly gray pollinose. Mesepimeral tuft and hair on pronotum and proepisternum brown. Legs dark grayish-brown with dark hair, somewhat long and shaggy along dorsal edges of femora.

Abdomen black, thinly pollinose, with sparse, long dark brown hair. Genitalia as in Fig. 3. Dististyle evenly tapering, with two small, stout, medially directed, apical spines. Ventral plate quadrate with deep, rounded median ventral keel. Paramere small, triangular, without arm or other associated spines.

Pupa. Respiratory organ about two-thirds the length of the pupa, consisting of about 25 slender, thread-like filaments arranged in four short-petiolate groups. Ventral group with nine or ten filaments; each remaining group (dorsal, lateral and medial) with four or five (exceptionally three to seven) filaments usually arising together from the apex of their petiole.

Posteriorly directed spines absent on anterior border of abdominal tergites. Anteriorly directed hooks on posterior borders of tergites long and slender, present on segments 2 to 8 (4 pairs on tergites 3 and 4, with fewer spines on tergites 2 and 5-8). Terminal segment with a dorsal pair of long, stout hooks. Cocoon reduced to a few loose threads.

Holotype. Female, reared from a pupa collected May 9, 1962, from a small, roadside ditch three miles south of Huntsville, Muskoka Dist., Ontario, D. M. Wood. No. 8195 in Canadian National Collection, Ottawa.

Allotype. Male, same data as holotype.

Paratypes. Five females, same data as holotype. One male, May 12, 1960, otherwise same data. Deposited in Canadian National Collection and U.S. National Museum.

Comments. A male of this species (the paratype mentioned above) was unfortunately selected by Davies, Peterson and Wood (1962) for the illustration (Fig. 59) of the genitalia of *Cnephia abdita* Peterson. References made by these authors (page 97) to the occurrence of *abdita* in small, warm streams flowing through open fields also applies to *abditoides*. The male genitalia of *abditoides* are larger and more heavily sclerotized than those of *abdita*, but diagnostic features have not yet been found, and males may best be separated by the colour of the hair of the scutum, which is brown in *abditoides*, whitish in *abdita*. The female of *abditoides* may be separated by the smaller, rounded (in anterior view) frons and smaller basal tooth on the tarsal claw. The respiratory organ of the pupa of *abditoides* has a larger number of filaments, the ventral petiole having nine or ten filaments, instead of four or five as in *abdita*.

Simulium anatinum, new species

Simulium (*Eusimulium*) "H", Bennett, 1960, *Canad. J. Zool.* 38:379 (female bloodsucking habits).

Female. A small gray species with white hair and gray legs similar to *S. innocens* (Shewell) from which it may be separated by the wider frons.

Posterior surface of head, frons and clypeus, gray pollinose with whitish hair, that on frons and clypeus proclinate and recumbent. Frons about one-eighth the width of the head. Antenna dark gray with pale pubescence; scape and pedicel paler with pale hair. Palpus gray pollinose with whitish hair; length of sensory vesicle of third segment about one-fourth the length of the segment.

Scutum gray pollinose with recumbent white hair. Scutellum with long, somewhat recumbent, medially directed white hair mixed with a few darker hairs. Pleuron and postscutellum gray pollinose, concolorous with scutum. Pleural tuft and hair on pronotum and proepisternum white. Postscutellum and katapisternum bare. Precoxal bridge present. Costa, stem vein, dorsal surface of radius and ventral surface of subcosta and radial sector with dark hair, a few white hairs at the base of the costa and on the stem vein. Fore coxa gray pollinose, concolorous with pleuron. Legs grayish-brown, paler in teneral specimens. Tibiae and tarsi dark brown; with white hair basally and brown hair on the tarsi. Calcipala minute, pedisulcus shallow. Claw with large, thumb-like basal lobe.

Abdomen gray, paler ventrally with long, dense, white hair on top and sides, sparser and shorter ventrally; last three to four segments with a few long, dark hairs dorsally. Genitalia as in Fig. 4. Arms of genital fork moderately slender; terminal plates with infolded posterior margin, appearing as a sclerotized edge in ventral view, the anteriorly-directed apodeme minute or absent.

Male. Clypeus grayish-black, with sparse gray pollen and dark reclinate hair. Antenna dark gray with pale pubescence. Palpus grayish-black with dark hair.

Scutum dark brown with a slight, grayish pollinosity in anterior view and moderately sparse recumbent hair, brownish medially (yellowish in some specimens) changing to yellow laterally, paler at the humeral angles. Scutellum with erect dark hair. Pleuron grayish-black with gray pollen. Mesepimeral tuft and hair on pronotum and proepisternum brown. Legs dark with brown hair (sometimes with a few pale hairs).

Abdomen dull, dark brown with sparse brown hair dorsally and longer, denser hair laterally. Genitalia as in Fig. 5.

Pupa. Respiratory organ slightly longer than pupa, consisting of twelve long, slender filaments arranged in four groups, two dorsal petiolate groups of three filaments each, branching almost at right angles to the two ventral petiolate groups, also each with 3 filaments. Cocoon fragile, slipper-shaped, with long anterior median process, its edges somewhat thickened.

Holotype. Female, reared from a pupa collected May 15, 1962 from a small roadside ditch three miles south of Huntsville, Muskoka Dist., Ontario, D. M. Wood. No. 8196 in the Canadian National Collection, Ottawa.

Allotype. Male, May 9, 1962, otherwise same data.

Paratypes. Four males, two females, same data as allotype. One female, same data as holotype. One male, ten females, May 12, 1960, same data as holotype. One male, May 13, 1960, small roadside ditch near Mile 30.5, Highway No. 60, Algonquin Park, Ont. Three females, May 22, 1961, roadside ditch 9 miles east of Kaladar, Ont. Deposited in Canadian National Collection, U.S. National Museum and McMaster University.

Comments. This species was included under *S. congareenarum* (D. & S.) by Davies, Peterson and Wood (1962) because of the presence of twelve filaments in the pupal respiratory organ, although some differences between the two were realized. Couplet 9 of their key to the females may be amended as follows:

9. Head relatively small, its width to that of the thorax (at the humeral angles, 1 to 1.2; the U-shaped area enclosed by arms of genital fork wider than long; cercus longer than high *anatinum*
Head width to that of thorax 1 to 1.1; the U-shaped area enclosed by arms of genital fork as long as, or longer than wide; cercus higher than long *excisum* D., P. & W.

Males run to *S. innocens* (Shewell) in their key to the males, page 89, from which they may be separated by the longer parameral spines, which are as long as, or longer than, the distance from the tip of the basal arm of the ventral plate to the point of its attachment to the paramere (the parameral spines of *innocens* are about three-quarters this distance).

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Literature Cited

- DAVIES, D. M., PETERSON, B. V. and WOOD, D. M. (1962). The black flies (Diptera: Simuliidae) of Ontario. Part I. Adult identification and distribution with descriptions of six new species. Proc. Entomol. Soc. Ont., 92:71-154.

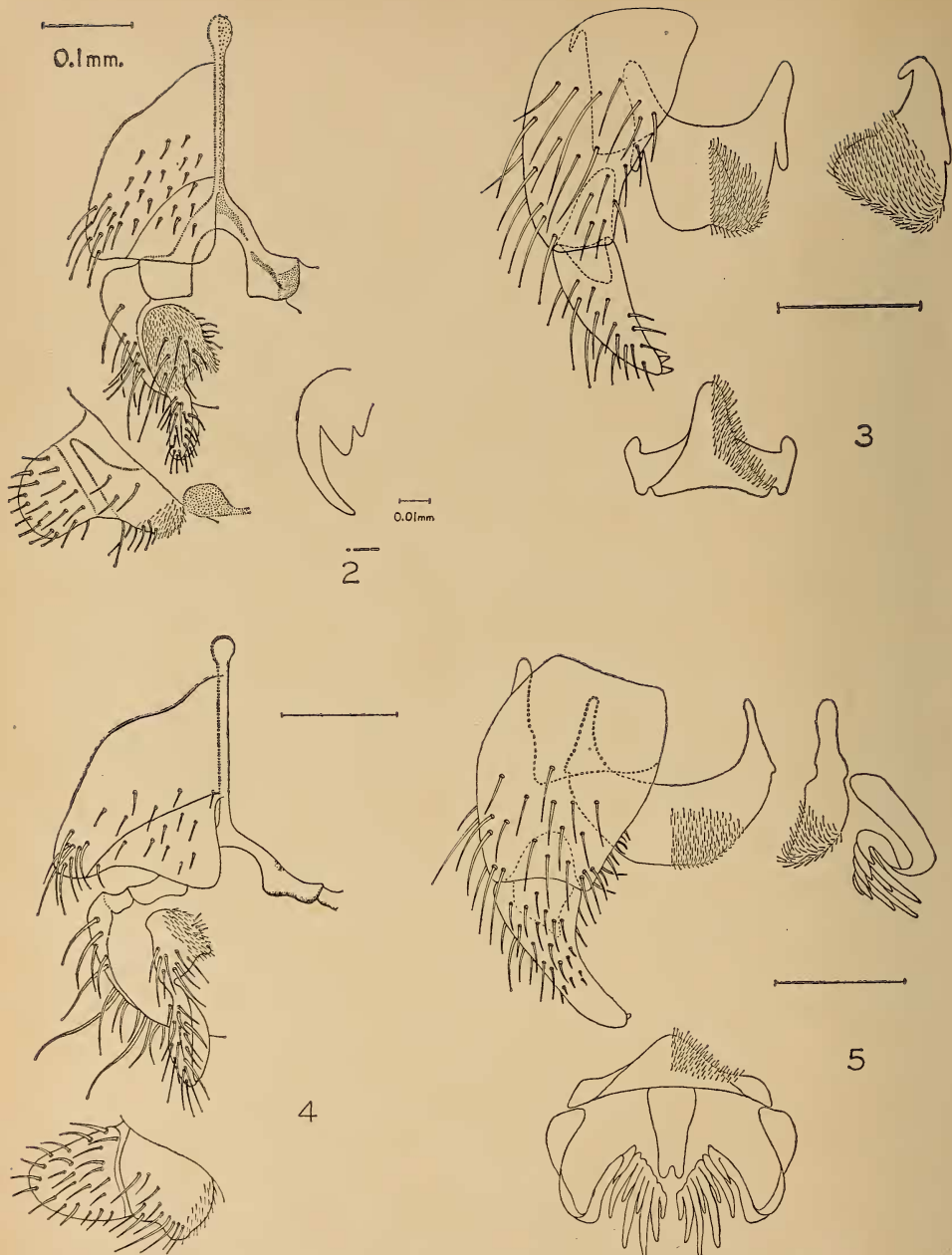


FIG. 1. Female genitalia of *Cnephia abditoides* (ventral view)

FIG. 2. Metatarsal claw of *C. abditoides*

FIG. 3. Male genitalia of *C. abditoides*

FIG. 4. Female genitalia of *Simulium anatinum*

FIG. 5. Male genitalia of *S. anatinum*

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